

Remarks

Applicants have amended claims 19, 25, 29 and 43, and have cancelled claim 32. Accordingly, claims 1, 7, 11 to 14, 19 to 21, 25 to 27, 29, 33 to 34, 37, and 41 to 44 remain pending in this patent application.

Applicants now address each and every one of the Examiner's points raised in the above-identified Office Action, as follows:

I. Withdrawal of Claim Rejections

Applicants acknowledge with appreciation the Examiner's withdrawal of the claim rejections as noted on Page 2 of the above-identified Office action.

II. Rejection of Claims Under Section 103 based on GB654 and EP125

The rejection of claims 1 to 4, 7, 11, 12, 14 and 19 to 21 under 35 U.S.C. §103 as being allegedly unpatentable over GB654 in view of EP125 has been maintained in this Office action. While GB654 discloses a cemented carbide, it fails to disclose a carbide construction where the binder comprises from 10 to 30 percent by weight of the construction. The Examiner asserts that GB654 discloses a construction where the binder comprises 9 percent by weight of the construction, and that 9 percent by weight is "close enough" to Applicants' claimed range of 10 to 30 percent by weight so that one having ordinary skill in the art would expect the same results.

Applicants do not agree with this simplistic and unsupported conclusion for the following reasons. First, GB654 is concerned with controlling, specifically minimizing, grain growth and has found that this occurs by limiting the amount of binder that is used to make the construction. Thus, one having ordinary skill in

the art aware of GB654 and its teachings would not be motivated to use any more of the binder alloy than as disclosed therein as this would be contrary to the intent and purpose of GB654. Further, GB654 fails to disclose or remotely suggest the combination of different materials in forming the binder with the specific purpose of more closely matching the coefficient of thermal expansion (CTE) of the WC grains.

Further, GB654 fails to disclose or suggest the use of Mn in addition to the binder ingredients disclosed therein. In this regard, the Examiner relies on EP125. GB654 is focused on developing a carbide composition having high abrasion resistance, and EP125 is focused on developing a carbide composition having enhanced wear resistance through surface hardening, and based on this the Examiner submits that the two references are properly combinable.

EP125 discloses making a cemented carbide using Mn (inter alia) as a replacement to conventional cemented carbide comprising cobalt. EP125 discloses that Mn can be used to promote formation of a hardened surface through strain induced partial phase transformation. However, EP125 fails to disclose the use of cobalt in the amount claimed (10 to 30 percent by weight) to make its carbide composition.

The Examiner asserts that it would be obvious to one having skill in the art (aware of EP125 and GB654) to take the Mn from EP125 and simply add it to the composition of GB654, to thereby produce a cermet composition as allegedly recited in Applicants' claims. However, for purposes of argument, Applicants submit that the most that one skilled in the art would be motivated to do (based on their knowledge of EP125 and GB654) would be to add Mn to the composition of GB654. But, any such addition of Mn would be done only for the purpose of

possibly improving wear resistance, and any such addition of Mn would not cause the total amount of the binder to exceed the maximum as set forth in GB654 (i.e., the total binder content would not exceed 9 percent).

Applicants, thus submit that one having ordinary skill in the art taking the Mn from EP125 and adding it to the composition of GB654 would not arrive at Applicants' cermet composition as recited in the independent claims, i.e., comprising both the specific amount of the binder material and the specific binder CTE. Applicants submit that these parameters are unique to its intended purpose of developing a special binder alloy that is aimed at producing a cermet construction having a desired thermal stability (through more closely matching the CTE of the binder with that of the WC). Since neither GB654 nor EP125 disclose or remotely suggest this purpose, Applicants submit that one skilled in the art aware of both of these references would not be motivated to take the Mn from EP125 and combine it with the composition of GB654 to produce the cermet construction comprising the binder features noted above as recited in Applicants' independent claims.

In view of the above, Applicants submit that its cermet construction as recited in independent claims 1, 14 and 25 is not obvious based on the combination of GB654 and EP125, and respectfully request that the rejection of these claims and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

III. Rejection of Claims Under Section 103 based on GB654, EP125, GB301, Liang and Fang

The rejection of claims 13, 33, 34, 37, 41 and 42 under 35 U.S.C. §103 as being allegedly unpatentable over GB654 in view of EP125, GB301, Liang and

Fang has been maintained in this Office action. Applicants submit that the subject matter recited in claim 13 is not obvious over the noted combination of references for the same reasons presented above in Section II. Applicants submit that its cermet construction as recited in independent claim 33 is properly allowable over GB301, Liang and Fang for the same reasons presented in its response of January 24, 2007.

In view of the above, Applicants submit that its cermet construction as recited in amended independent claims 1 and 33 is not obvious based on the noted combination of references, and respectfully request that the rejection of these claims and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

IV. Rejection of Claims Under Section 103 based on GB654, EP125 and Fang

The rejection of claims 25 to 27, and 29 under 35 U.S.C. §103 as being allegedly unpatentable over GB654 in view of EP125 and Fang has been maintained in this Office action. Applicants have amended independent claim 25 to introduce claim features present in independent claim 1, and for this reason submit that such amended independent claim is not rendered obvious over the noted combination of references for the same reasons presented above in Sections II and IV.

In view of the above, Applicants submit that its cermet construction as recited in amended independent claim 25 is not obvious based on the noted combination of references, and respectfully request that the rejection of this claim

and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

V. Rejection of Claims Under Section 103 based Fang

Claims 25 to 27, 32, 33, 37, and 41 to 43 have been rejected under 35 U.S.C. §103 as being allegedly unpatentable based on Fang. Applicants have amended independent claims 25 and 43 to include claim features as noted above in independent claim 1. For the same reasons presented in Applicants' earlier response of January 24, 2007, Applicants submit that Fang fails to disclose or suggest a cermet composition as recited in amended independent claims 25 and 43, and as currently recited in independent claim 33, i.e., Fang fails to disclose or suggest a cermet construction that makes use of a binder alloy to actually bond the WC grains together having the recited CTE parameters.

In view of the above, Applicants submit that its cermet construction as recited in independent claims 25, 33 and 43 is not obvious based on Fang, and respectfully request that the rejection of these claims and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

VI. Rejection of Claims Under Section 103 based on EP125

Claims 25 to 27 and 32 have been rejected under 35 U.S.C. §103 as being allegedly unpatentable based on EP125. Applicants have amended independent claim 25 to include claim features as noted above in independent claim 1. Thus, for the same reasons presented in Section II above, Applicants submit that EP125 fails to disclose or suggest a cermet composition as recited in amended independent claim 25.

In view of the above, Applicants submit that its cermet construction as recited in independent claim 25 is not obvious based on EP125, and respectfully request that the rejection of these claims and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

VII. Rejection of Claims Under Section 103 based on EP125 in view of Hale

Claims 1, 7, 11, 12, 14, 19 to 21, 25 to 27, 29 and 32 have been rejected under 35 U.S.C. §103 as allegedly being unpatentable based on EP125 in view of Hale. Applicants submit that Hale is essentially identical to GB654 (it is the priority document for GB654). Thus, for the same reasons presented above in Section II, Applicants submit that the combination of EP125 and Hale fails to disclose or suggest a cermet composition as recited in independent claims 1, 14 and 25.

In view of the above, Applicants submit that its cermet construction as recited in independent claims 1, 14 and 25 is not obvious based on the combination of EP125 and Hale, and respectfully request that the rejection of these claims and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

VIII. Rejection of Claims Under Section 103 based on EP125 in view of EP301 and Hale

Claims 1, 7, 11 to 14, 19 to 21, 25 to 27, 33, 34, 37 and 42 have been rejected under 35 U.S.C. §103 as allegedly being unpatentable based on EP125

in view of EP301 and Hale. As noted above, Applicants submit that Hale is essentially identical to GB654 (it is the priority document for GB654). Thus, for the same reasons presented above in Section II, and in view of the amendments made to independent claims 14 and 25, Applicants submit that the combination of EP125 and Hale with EP301 fails to disclose or suggest a cermet composition as recited in these independent claims.

In view of the above, Applicants submit that its cermet construction as recited in independent claims 1, 14 and 25 is not obvious based on the combination of EP125, EP301 and Hale, and respectfully request that the rejection of these claims and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

IX. Rejection of Claims Under Section 103 based on Fang, in view of EP125 and Hale

Claims 1, 7, 11 to 14, 19 to 21, 25 to 27, 29, 32 to 34, 37 and 41 to 43 have been rejected under 35 U.S.C. §103 as allegedly being unpatentable based on Fang in view of EP125 and Hale. For the same reasons presented above in Sections II, V and VII, and in view of the amendments made to independent claims 14, 25 and 43, Applicants submit that the combination of Fang, EP125 and Hale fails to disclose or suggest a cermet composition as recited in these independent claims.

In view of the above, Applicants submit that its cermet construction as recited in independent claims 1, 14, 25, 33 and 43 is not obvious based on the combination of Fang, EP125 and Hale, and respectfully request that the rejection

of these claims and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

X. Conclusion

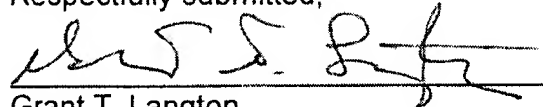
For the reasons presented above, Applicants respectfully request that the rejections of the claims under 35 U.S.C. §103 be reconsidered and withdrawn, and that claims 1, 7, 11 to 14, 19 to 21, 25 to 27, 29, 33 to 34, 37, and 41 to 44 pending in this patent application be passed to allowance.

Should the Examiner evaluate this Response and conclude that the claims are not properly allowable, Applicants request that the Examiner please call its below-identified patent attorney to discuss steps that may be taken to facilitate allowance of this patent application.

The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. The Commissioner is authorized to charge any underpayment or overpayment of fees due, including extension of time fees, to Deposit Account No. 50-3683.

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Respectfully submitted,



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